0006

APPLICATION FOR APPROVAL OF SEISMIC EXPLORATION PLAN

This application for approval of Seismic Exploration Plan is submitted pursuant to 30 C.F.R. § 211.10. The purpose of the program is to obtain additional geophysical, hydrologic and geologic data. It is also requested that this application be processed as expeditiously as possible, in order that the proposed program can be completed during the current field season. This schedule is necessary so that applicant will be in a position to obtain approval for its pending Mine Plans covering the subject federal coal leases as soon as possible after the Central Utah Regional Impact Statement becomes final.

Introduction

This application covers the proposed reflection and refraction seismic profiles and locations located on federal coal leases held by Routt County Development, Ltd., a subsidiary of Energy Fuels Corporation. All proposed seismic profiles and locations are within the Manti-LaSal National Forest. The continuous reflection seismic profiles 78-5, 78-6, and 78-7 and the low velocity layer refraction locations 2, 3, 5, 8, 9, 10, 11, 17, and 25 are located entirely within Emery County, Utah. The continuous reflection seismic profiles 78-9, 78-10, and 78-11 and the low velocity layer refraction locations 1, 12, 13, 14, 18, 19, 20, 21, 22, 23, and 24 are located entirely within Carbon County, Utah. The continuous reflection seismic profiles 78-1, 78-2, 78-3, 78-4, and 78-8 and the low velocity layer refraction locations 4, 6, 7, 15, and 16 are located in both Emery and Carbon Counties, Utah. It is proposed that the data acquisition on these profiles and at these locations, which are located on Federal Coal Leases Numbers U-020305, U-0142235, U-0147570, U-044076, and U-073120, be completed during the months of September and October, 1978. All phases of this geophysical exploration program shall be conducted in such a manner so as to protect the vegetative cover, drainages and water quality, both surface and subsurface.

Reflection Seismic Profiles

The accompanying map to this application shows the locations of the continuous reflection seismic profiles. These profiles have been strategically positioned in areas where data are required to achieve close control on the structure, the faulting, and associated geological features affecting the mine plan. These profiles have been located with careful reference to previously existing roads, trails, and access. Particular attention was paid in laying out the program to avoid radical elevation differences; insofar as is possible, the profiles follow ridges in order to follow pre-existing access and to minimize problems in data processing and interpretation. The accompanying Table I, together with the program map, shows the profile number, profile length, and lease numbers affected.

APPROVED: 10/10/78

Allen J Vance

for Area Mining Supervisor

Type of Equipment and Crew to be Used

The data acquisition will be accomplished by Geoterrex, Ltd., with offices at Three Park Central, Suite 350, 1515 Arapahoe Street, Denver, Colorado 80202, telephone number 303/571-1146, represented by Mr. C. J. Wiles using the "Mini-Sosie" technique. This technique is extensively described and detailed in the accompanying documentation. The crew is equipped with three (3) Ford F-250 trucks which will be limited to those roads and trails designated by the United States Forest Service and/or the United States Geological Survey. No drilling or disturbance of the subsurface will occur; the energy source, an earth tamper (Wackers GVR-200Y) will be used; cables and sensors will be laid out on the surface of the ground. The total reflection seismic program planned is 20.33 miles; data will be recorded at a nominal 66-foot interval; a total of approximately 1,600 recordings will be made.

Refraction Seismic Locations

The accompanying map to this application shows the locations of twenty-five (25) refraction seismic determinations. These data points are necessary to determine the velocities in the surficial layer and in the shallowest sub-surface layer so as to correct the reflection data for elevation differences. These locations are indicated by a large rectangle within which a small suitable area will be selected. These locations with elevations, associated core-holes, reflection profiles, and relation to the Upper O'Connor coal seam are shown on Table II. These particular locations have been selected for the following reasons:

1. A wide variation in elevation between 8,600 feet and 9,660 feet.
2. A wide variation in depth to the Upper O'Connor seam, between 0 and 1,700 feet.
3. All but five are associated with previously drilled core holes for calibration purposes.
4. Eleven of them are common to two or more profiles.
5. They are as uniformly spaced along the profiles as possible after conforming to the four prior criteria.

Type of Equipment and Crew to be Used

The same personnel from the above-referenced company, Geoterrex, Ltd., will acquire this data. A short 100-foot spread cable will be laid out on the surface of the ground; to this cable 12 sensors will be attached; this will be connected to a man-transportable recording unit, SIE Model RS-24. The energy source will be an electrically detonated cap with not more than four ounces of dynamite in a hand-augured hole, 12 to 18 inches

deep and not more than two (2) inches in diameter. The small hole is necessary for safety measures. The holes will be immediately refilled. Two holes and records will be required at each location.

Reclamation

All locations will be returned to original condition. All augured holes will be refilled and tamped. All roads, trails, and access employed will be returned to original condition. A mixture of grass and brush seed native to the area has been selected. As required, locations and/or profiles will be seeded during the fall with 13 lbs./acre of the following seed mixture:

(1) Manchar Smooth Brome
(2) Ranger Alfalfa
(3) Kentucky Blue Grass
(4) Intermediate Wheat Grass
(5) Timothy Grass

Protection of the Environment

The preservation of the environment will be taken into account through all phases of this seismic program. All seismic profiles and refraction locations have been programmed to minimize disturbance to the terrain by using previously existing roads, trails, drill sites, and access. Throughout all phases of this seismic program, the personnel of the district ranger's office of the United States Forest Service will be informed of the progress.

It is the policy of this company to reclaim all sites and associated roads, trails, and access to the same, or in some cases, better, condition than they were prior to use.

TABLE I

REFLECTION SEISMIC PROFILES

Profile	Profile Length	Lease Numbers
78-1	28,550 feet; 5.41 miles	U-0142235; U-0147570; U-044076
78-2	9,400 feet; 1.78 miles	U-0142235; U-0147570; U-073120
78-3	15,800 feet; 2.99 miles	U-0142235; U-0147570; U-073120
78-4	15,200 feet; 2.88 miles	U-044076; U-020305
78-5	3,200 feet; 0.61 miles	U-044076
78-6	7,800 feet; 1.48 miles	U-044076
78-7	7,000 feet; 1.33 miles	U-044076
78-8	6,600 feet; 1.25 miles	U-0147570; U-044076; U-020305
78-9	4,950 feet; 0.94 miles	U-020305
78-10	3,950 feet; 0.75 miles	U-020305
78-11	4,900 feet; 0.93 miles	U-020305
Total:	107,350 feet; 20.33 miles	

TABLE II

SEISMIC REFRACTION LOW VELOCITY LAYER LOCATIONS

Location No.	Elevation	Core Hole	Reflection Profile	Approximate Depth to Upper O'Connor
1	9,500	74-10-1	78-1	1,700
2	8,720	74-27-1	78-4	900
3	8,600	75-34-1	78-6	700
4	9,540	79-14	78-1; 78-2; 78-11	1,140
5	9,520	75-15-3	78-2	1,400
6	9,450	74-23-2	78-1; 78-3	1,000
7	9,540	77-23-1	78-1; 78-8	1,000
8	9,660	M-8H	78-1; 78-4	1,150
9	9,580	74-26-3	78-1; 78-5	1,250
10	8,860	75-26-1	78-1; 78-6	600
11	9,480	M-5H	78-1; 78-7	1,100
12	9,580	76-13-2	78-2; 78-9	1,200
13	9,480	NONE	78-2; 78-10	1,100
14	8,700	74-13-1	78-3; 78-10; 78-11	0
15	9,580	74-26-1	78-8	1,000
16	9,580	74-23-1	78-4; 78-8	1,000
17	9,580	74-26-2	78-4	1,200
18	9,360	77-24-1	78-4	700
19	9,260	77-24-2	78-4	500
20	9,150	77-24-3	78-4	350
21	8,900	76-23-1	78-3	300
22	9,180	76-23-2	78-3	550
23	8,900	NONE	78-3	250
24	9,350	NONE	78-3	650
25	8,760	NONE	78-3	1,000

Note: All elevations are approximate. Actual locations may be anywhere within the rectangular area. Locations near core holes should be chosen so as to avoid the mud pits and holes.